CHAPTER SEVEN: A SUMMARY OF ISSUES

7.1 This chapter seeks to consolidate the views of the Committee on the issues raised during the inquiry under the headings of the various forms of communications – postal services, broadcasting and telecommunications.

7.2 Two major issues emerged during the inquiry: the need for fast and affordable access to the Internet in the External Territories and the problem of the capacity and frequency of flights into the Indian Ocean Territories. These are not simple issues; they affect many of the other services available to people in the territories – health and education, the development of business, tourism and employment – and the overall quality of life that comes from good communications and connections with the wider world.

Postal Services

7.3 Traditional mail services remain slow and unreliable to and from all of the territories. The slowness of the service hampers any prompt community response to events, even to this inquiry. While it might be argued that post as a means of transferring information is giving way to electronic transfers, the need for hard copy is still significant. Australia's geography, size, distances between capital cities and the spatial location of its population indicate the enormity of providing an efficient postal delivery network. There are five major forms of mail delivery, namely: street mail deliveries, roadside delivery, private boxes, community bags and counter delivery.[1]

7.4 Unlike on the mainland, residents in the External Territories only receive delivery to post office boxes and not to their residences. Australia Post benefits from philatelic sales of Island products but does not recompense the Islands for those sales.

7.5 There is no guarantee of a mail service by air to Norfolk Island. Greater guarantees exist for Express Post but that service is at increased cost to the sender and parcels arrive in poor condition. Norfolk Island enjoys a much more frequent air service[2] than the Indian Ocean Territories. Norfolk Island remains concerned at Australia Post's conflicting use of the New South Wales postcode 2899 combined with the imposition of international regulations on the community. This confusion is indicative of a number of problems associated with the legislative position of Norfolk Island. Some clarification of the more confusing aspects of the legislative arrangements between Australia and Norfolk Island might be a useful exercise.

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1 House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform (1996), *Keeping Rural Australia Posted*, AGPS, Canberra, p.21.

2 We have an air service that operates at least five days a week. At the moment we have an air service from Sydney seven days a week and we do actually carry mail seven days a week. Norfolk Post *Transcripts*, p. 99.

7.6 Postal services to Christmas Island and the Cocos (Keeling) Islands are constrained by the availability and capacity of flights into the Islands. The result is often long delays and higher costs. Mail is often offloaded to the shipping service due to lack of available space. Postal services to the islands now rely on the one remaining flight a week underwritten by the Commonwealth and an intermittent fortnightly flight. The air service caters predominantly for passengers thus allowing only limited space for mail, medical supplies and produce. There is no guarantee that mail sent to the Islands from the Australian mainland will arrive by air, even if extra postage is paid. The only guarantee of post arriving within a fortnight is for the sender to mail it Express Post and pay the additional higher price. There is also no guarantee that parcels sent by courier will not be off loaded from the air service due to lack of space.

7.7 Fruit and vegetables, bulk goods and mail are generally sent by ship to Cocos (Keeling) Islands. This shipping service, which operates a round trip between Fremantle, Cocos (Keeling) Islands, Christmas Island, Singapore, and returning Singapore, Christmas Island and Fremantle every five to six weeks, cannot provide a timely service.

7.8 The mail service from the islands to the Australian mainland is more efficient as there is less airfreight from the Islands to the mainland and therefore minimal necessity for mail to be off loaded.

7.9 Current negotiations for a new air service include freight priorities as a major issue. Arrangements are currently underway for prioritizing freight to ensure the greatest needs of the island communities are met (e.g. the carriage of sufficient mail to allow essential commercial services, such as banking, to operate).[3]

Conclusion

7.10 The Committee concludes that the current arrangements for the air service into the Indian Ocean Territories is inadequate and adversely affects almost all aspects of life in the territories including the postal service, business, tourism and health services. The Committee believes that this service must be improved as a matter of urgency.

Broadcasting

7.11 The External Territories presently have only limited television and radio reception. As all broadcasts are received by satellite, they may vary in quality due to the prevailing weather or the standard of reception equipment. Generally, only public broadcasting is transmitted, with little commercial television available. However, with the conversion to digital satellite services, this situation may soon change. The inquiry raised a number of issues in relation to broadcasting, including:

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3 These issues have been considered in more detail in Chapters 4 and 5. The Committee's recommendations appear in those chapters.

- the present uneven quality of broadcasting services received in the External Territories;

- the responsibility, divided between the Commonwealth, the local Administration, the carriers, the networks and the population, for providing, upgrading and maintaining broadcasting infrastructure;

- the cost of its provision, and

- the social importance of broadcasting in the territories.

7.12 Television and radio reception in the External Territories has been below the standard judged acceptable in major population centres. Local re-transmission of satellite broadcasts has depended on funding from community organisations for the installation of receiving dishes, transmitter towers and other equipment. In some cases, individuals are left to arrange for the provision of their own satellite receiving equipment, at some cost. Occasional government support has been provided.

7.13 A further issue is the social and political impact of various broadcasting options. Broadcasting is important as a source of news, entertainment and cultural identification. It should be noted that the External Territories vary in their ethnic and demographic composition. These populations may prefer to access broadcasts from other regions, especially nearby Asian countries. Any broadcasting developments should take into account such cultural preferences. However, in principle, Australia's External Territories are part of Australia. Retaining them as part of Australia is of considerable strategic importance. They should have access to as wide a variety of Australian broadcasts as possible. It is important to the cultural integration of the nation that this occurs.

The quality and variety of broadcasting into the territories

The general service

7.14 The Remote Areas Broadcasting Services (RABS) is licensed to provide television broadcasts to regional Australia. It carries the ABC and in some cases SBS, and it carries three remote commercial television services (RCTS). These include Golden West Network (GWN WA), Telecasters Australian Limited (TAL-north eastern Australia), Imparja (central Australia), and WIN (regional eastern and western Australia). Under this arrangement while the analogue system was in place, the Indian Ocean Territories received the ABC, GWN. Norfolk Island received ABC and SBS television. Various community and ABC radio broadcasts are relayed into the territories.

Commercial television

7.15 The Department of Communications, Information Technology and the Arts reported that it would be expensive to provide all three metropolitan commercial television networks, Channels 7, 9 and 10, to the External Territories. Costs would be subject to commercial negotiation with the networks and might also be affected by the terms of contractual arrangements between those networks and the existing remote commercial television services, WIN, TAL, ITN and GWN. It was likely there would

be significant costs to Government including those for dedicated satellite channels.[4] Such a scheme would also require ABA approval.

7.16 The Department of Communications, Information Technology and the Arts informed the Committee that broadcasters have undertaken to rollout re-transmission facilities as quickly as possible. They expect to complete the process between March and September 1999.

Possible change with the conversion of analogue to digital

7.17 Conversion to digital satellites for broadcasting was due to occur in the latter part of 1998. At the time of writing this report that time had extended to March 1999. There were to be three months of simulcasting of the digital and analogue signals within the transfer period. The ABC, SBS, ITN and TAL have contracted with the OPTUS satellite for transmission, while GWN has contracted with Telstra, using the PanAmSat system. WIN TV recently chose OPTUS to transmit its broadcast service.[5] In Western Australia, and subsequently in the Indian Ocean Territories, ABC and SBS services and, since February 1999, WIN will also be provided by Telstra. Its reception in the Territories would be dependent on whether an additional channel could be provided by the administration.

7.18 In the conversion to the new digital satellites, both OPTUS and Telstra will be moving from the use of spot beams to national beams. This will leave Norfolk Island within the footprint but with a considerable time lag for their broadcasts, as Telstra will transmit to the Remote Area Broadcasting Service in Western Australian time. However, the Indian Ocean Territories will be only on the periphery of the footprint of the new Telstra satellite and outside the footprint of the OPTUS satellite.

7.19 The conversion has required the replacement of receiving dishes and decoders used in the territories. The Norfolk Island Government has allocated money for a new receiving dish for the island; however a consultant was still examining the options at the time of writing. The Christmas Island Administration installed digital receiving equipment in March 1998. On Cocos, the installation of digital equipment occurred in June 1998.[6] Tests have been conducted to ascertain the quality of reception. The current situation is that Norfolk Island can receive ABC, SBS, TAL (7 Central) and Imparja; the Indian Ocean Territories can receive ABC, SBS and GWN, with the WIN service dependent on whether re-transmission arrangements for an additional television channel can be made on the Islands.[7]

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4 Letter from Department of Communications, Information Technology and the Arts, 21 July 1998.

5 Media Release, *WIN Television announces WA satellite carrier*, WIN Corporation Pty Ltd, 25 August 1998.

6 See Chapters 3, 4 and 5 for details of the conversion costs.

7 Department of Communications, Information Technology and the Arts, *Transcripts*, pp. 17-18.

Quality of reception

7.20 The transition to digital broadcasting has not been entirely smooth. Early in 1998, remote viewers were temporarily without any commercial television services, as broadcasters vied for platform control. Most mainland communities had facilities to re-transmit satellite signals, and some 12,000 remote households in Australia had already purchased equipment for the direct-to-home satellite reception of the Remote Area Broadcasting Service. However, because the OPTUS and PanAmSat satellites were located in different parts of the sky[8], in order to access both OPTUS and Telstra satellite services, viewers needed to obtain either two separate antennas or one movable antenna, as well as an integrated receiver decoder (IRD). This did not seem to be a very practical arrangement.

7.21 There are particular problems associated with the availability of services to the Indian Ocean Territories. The Christmas Island District High School reported a lack of access to mainland educational programs such as the Westlink service, an educational service run by the Western Australian Government[9] while Christmas Island phosphates noted that community access to subscription television services would be useful.[10] The Cocos Shire Council reported that radio broadcasts were also subject to interference.[11] There appeared to be no comprehensive access to programs of choice nor a standard for acceptable reception.

7.22 Broadcasting deficiencies appear to rest on the capacity and orientation of the satellites used for transmission.

Infrastructure responsibility and funding

7.23 The Australian Broadcasting Authority (ABA) is responsible for promoting the availability of a diverse range of radio and television services throughout Australia. It plans the availability of segments of the broadcast bands and, *inter alia*, it allocates licences. It cannot fund or make others fund new broadcasting services. The regulatory Authority has no requirement to ensure a particular level or quality of reception. What constitutes 'diversity' for the External Territories and what constitutes 'responsiveness to audience needs'[12] in unclear. There is no USO in relation to broadcasting, which could, if it existed, place some responsibility on the broadcasters.

8 WIN, *Transcripts*, p. 266.

9 Christmas Island District High School, *Submissions*, p. S21.

10 Christmas Island Phosphates, *Submissions*, p. S8.

11 Cocos Islands Shire Council, *Submissions*, p. S3.

12 ABA, *Submissions*, p. S63.

7.24 In the External Territories the transmission is by satellite.[13] The ABC purchases 'appropriate satellite capacity to enable it to feed its mainland and island territory audiences, but we cannot guarantee that the satellite providers will necessarily design products that will allow the island territories to be served by that satellite capacity'.[14] While the number and quality of broadcast services into the territories have improved, they remain limited in range and uneven in quality.

7.25 Ground infrastructure is the responsibility of the local administrations, through the Department of Transport and Regional Services in the case of Christmas and Cocos and through the Norfolk Island Administration in the case of Norfolk Island. The local administrations have paid for upgraded equipment[15] to receive broadcasts from the carriers and the networks. Ground equipment alone cannot ensure good reception if the satellite capacity or the satellite positioning is insufficient to reach the remote islands.

7.26 Where these upgraded arrangements are not adequate, a number of options exist to overcome the shortcomings in the services. Individuals and organisations can purchase individual dishes. The Federal Government may provide, through the Centenary of Federation or the Regional Telecommunications Infrastructure Fund (RTIF) some further funding to allow communities to convert existing decoders.

7.27 Through these schemes, the Government has provided a subsidy to mainland viewers to enable the purchase of the new decoding units. In August 1998, the Federal Government announced new RTIF funding, including $101,000 to maintain the Remote Area Broadcasting Services Satellite Technology network for indigenous Australia. There is a subsidy available to replace analogue decoders with digital decoders at the re-transmission sites for the Broadcasting for Remote Aboriginal Communities Scheme (BRACS). It has been increased from $2,500 to $3,500.

7.28 However, currently the External Territories are not included in the funding allocation of the RTIF scheme. Its application to the territories is dependent on the further sale of Telstra.

Conclusion

7.29 While technical tests suggested that broadcasting reception in the External Territories would be possible with larger dishes purchased by the islands, the quality of that reception was uncertain and dependent on weather conditions. Despite the

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13 Until recently, facilities for the transmission of ABC and SBS radio and television services were owned by the Commonwealth and funded by separate appropriations to the National Transmission Agency (NTA). Transmission is generally terrestrial for domestic broadcasting with some use of satellites in remote areas. With the pending sale of the national transmission network to private enterprise, the Government has stated an intention to transfer funding for transmission services to the broadcasters who will then negotiate directly for their service requirements.

14 ABC, *Transcripts,* p. 214.

15 New satellite dishes and digital decoders: $60,000 on Christmas Island, $100,000 on Cocos Island. Department of Transport and Regional Services, *Submissions,* p. S175. $50,000 has been allocated by the Norfolk Island Administration for the upgrade of the satellite dish. Norfolk Island Government, *Transcripts* p. 74.

completion of technical tests, the Department of Communications, Information Technology and the Arts was not prepared to say whether they thought the reception of broadcasts on the islands was either adequate or inadequate until feedback was received on the 'operation over a year or so'. However, they did say that they thought they [the islands] were 'having some problems.[16] The inadequacy of both the quality of reception and variety of broadcasting into the territories would appear to rest on the availability of satellite capacity. This capacity is commercially driven and with the small populations in the territories, the provision of greater capacity falls outside the commercial interests of the networks and this is not supplemented by Government regulatory requirements governing the quality of reception.

7.30 However, the Committee reiterates its view expressed in Chapter 3. Broadcasting services are not simply a commercial matter. They influence both cultural identity and the Australian people's sense of national integration. For this reason it is in Australia's long term interest to ensure that all Australians receive a variety of Australian broadcast services through clear and reliable signals.

Telecommunications

7.31 Telecommunications, the capacity, quality and cost of the service, and access to the Internet were primary issues in motivating this inquiry. This is a time of great technological change in telecommunications, involving a shift from analogue to digital systems and the use of satellites. Given the expanding role of the Internet, telecommunications provides a particular challenge to governments and policy makers as any community without access to quality telephone, facsimile and data services at reasonable cost will rapidly find itself on the perimeter of economic and social development.

7.32 The Australian Communications Authority through the Department of Communications, Information Technology and the Arts submitted to the inquiry that they were 'not aware of any significant deficiencies in the adequacy of existing telecommunications services [to the territories] at present.'[17] This view was contradicted by a number of witnesses to the inquiry.

7.33 Access to health services was one issue that was raised in all the External Territories. The distance of the territories from the mainland makes the cost of transport high and the infrequency of transport links causes delays, which increase the health risk to patients. Communications services have always been the means of overcoming these disadvantages imposed by distance. Tele-medicine, a system using telecommunications to deliver advanced services, is the most modern system for the delivery of health care to remote people. It is not cheap and requires considerable infrastructure.[18]

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16 Department of Communication, Information Technology and the Arts, *Transcripts,* p. 25.

17 Department of Communications, Information Technology and the Arts, *Submissions,* p. S192.

18 The advantages and disadvantages and the costs of tele-medicine have been looked at by the House of Representatives Standing Committee on Family and Community Affairs, *Health of Line: A report on health information management and telemedicine,* 1997.

7.34 While the External Territories have standard telephone, facsimile and some data access, the slow speed and therefore expense of accessing the Internet has made services such as tele-medicine impracticable. The high cost of health care to both individuals in the territories and to the Commonwealth, created by the absence of tele-medicine must be balanced against increases in the cost of health care using local resources alone.

7.35 The telecommunications issues raised during the inquiry included:

- The provision of infrastructure in the light of new technologies;
- Access to telephones, fixed and mobile, and facsimile;
- The cost of the provision of such services to the External Territories, and
- The application of the USO in the External Territories.

The provision of infrastructure - satellites

From analogue to digital

7.36 Telecommunications to Norfolk Island is available either by the ANZCAN cable or by satellite. However, there are no cables connecting the Indian Ocean Territories to mainland Australia. In the absence of undersea cables, satellites deliver both broadcast and telecommunications services to these territories.

7.37 As with broadcasts, satellite services for telecommunications are in the process of changing from analogue to digital, the changeover being due for completion in late 1998. In the west, Telstra operates the PanAmSat2 for broadcasts and Intelsat for the delivery of the telephone system and OPTUS operates the Aurora platform. However the OPTUS Aurora satellite does not reach the Indian Ocean Territories. In the east the Telstra PanAmSat and the OPTUS B3 operate. A reliance on satellite systems imposes speaking delays and the vagaries of the weather affect signal strength.

7.38 Within the territories, normal telephone cables have delivered services to residences, businesses and other locations. These delivery systems on the Islands are also in the process of changing from analogue and mechanised systems only able to transmit single communications to digital systems which combine voice, facsimile and data transfer. Line capacity is crucial for access to digital technologies.

7.39 In 1998, with the telecommunications technology on the mainland changing from analogue to digital, Telstra has embarked on a strategy to digitise all services, whether provided by satellite or cable, through to the individual user. Telstra should complete the changeover on the islands by June 1999. This will provide an electronic telephone exchange, capable of more business applications. In its submission, Telstra claimed that, with the new cabling on the Island, all customers would be able to access data transfer services at speeds of 9.6kbps, a faster service but still not ISDN equivalent.

The provision of satellites

7.40 The satellites linking the Indian Ocean Territories to the mainland limit the services available on the islands.[19] The Indian Ocean Territories are on the edge of the range of the satellites serving the Islands. Therefore the signal strength is weak and adversely affected by bad weather. In bad weather communication transmissions are unreliable. When asked about the possibility of internet level services on Christmas and Cocos Islands, Telstra replied that:

> Certainly not with the cut-over to the new equipment. The new digital exchange will not provide that facility because there is a problem with the satellite link. … We can put ISDN cards in there but, because of the satellite link, we have got echo problems.[20]

7.41 In addition, satellite services only allocated certain transponder bandwidth capacities, so carriers such as Telstra have to contract for sufficient allocation to serve remote subscribers. Given the small populations on the Islands, it is not a commercial proposition for Telstra to contract sufficient bandwidth to supply people with an adequate level of Internet service. It was not clear whether Telstra was able or prepared to pay for more bandwidth allocation, in order to provide greater capacity to the Indian Ocean Territories or for the Antarctic Territory. The OPTUS satellite does not reach the Indian Ocean Territories. The current legislative arrangements do not provide for any regulations which apply to carriers in terms of providing minimum satellite bandwidth.[21]

7.42 The current or future adequacy or inadequacy of the infrastructure that supports the information economy, the current or future capability of the Australian telecommunications network, is the subject of a government inquiry, the National Bandwidth Inquiry. It is due to report to the Government by 1 October 1999. It follows upon the Digital Data Review. It is particularly concerned with the availability of adequate, high quality and appropriately priced bandwidth, a necessity should the USO be expanded to include a satellite delivered 64 kbps Internet service to those Australians unable to access the ISDN service.[22]

The future: Low-Earth Orbit satellite telecommunications

7.43 A future alternative might come in the form of the new global communications systems using constellations of moving satellites in low-Earth orbit, middle-Earth orbit and highly elliptical orbits. They will soon provide service to

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19 An alternative to a satellite link might have been an undersea cable link. It appeared to the Committee that an opportunity was lost with the failure of Telstra to provide a cable segment with Christmas Island from the new Jasaurus undersea cable to Indonesia passing relatively nearby. Norfolk Island also had the opportunity to negotiate with Optus regarding the location of its new trans-Pacific cable. The Antarctic Division was particularly interested in increasing the availability of satellite telecommunications bandwidth to overcome speed and volume limitations.

20 Telstra, *Transcripts*, p. 28.

21 Department of Communications, Information Technology and the Arts, *Submissions*, p.S265.

22 For terms of reference see Exhibit No. 30.

users located on the ground, sea or in the air. They will enable telephone, data transfer and eventually high-speed communications from anywhere to anywhere else on the Earth, as long as users have special hand-held transceivers. They will be used for telecommunications rather than broadcasting.[23] Although the satellite constellations may assist Island communications reasonably soon, initially, these systems will not be cheap to procure or use. An example is the new global system Iridium that has just started operations and advertised for customers.

7.44 Both Telstra and OPTUS have made arrangements to link with the new Iridium global mobile satellite system. Telstra is providing a call centre network to support Iridium customers throughout the Asia-Pacific region. OPTUS has announced plans also to link with the Iridium system. It is understood that an Iridium terminal will cost US$3,000 and US$3 per minute airtime. However, offshore entities such as DDI/BCC of Indonesia have agreed to establish a new Iridium company in Australia to provide services in the South Pacific region. There may be other competing interests.

Telephones and Facsimile

7.45 In the western territories, while the telephone service is adequate and improving, there are still problems of cost and reliability as far as data transmission is concerned. Telstra alone supplies the telephone services in the Indian Ocean Territories. Preselection, which would allow residents to use OPTUS, will not be available until the completion of the digitisation of the Islands in mid 1999. There are 1200 fixed telephone customers. The data and fax transmission rates are slow. All calls are made at the highest STD rate and are therefore expensive. This expense combined with the transmission rates impacts on many other services – fax, business contacts, tourism services and Internet use.

7.46 On Norfolk Island the telephone system, the provision of infrastructure and the costs and charges are the responsibility of the Norfolk Island Administration. The telephone system on Norfolk does not come under the Universal Service Obligation.

Mobile Phones

7.47 The availability of mobile phones in the External Territories is limited. In 1994-95 there were 330 customers. Only an analogue mobile phone service is currently available on Christmas Island. It would appear that there are no immediate plans to change this system to a digital one. It was Telstra's view that the islands would need to seek an extension from the Australian Communications Authority to continue the analogue service along with other remote areas of Australia when the national mobile service becomes digital in the year 2000.[24] There is no mobile telephone service on Norfolk Island, although a trunk mobile network exists.[25]

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23 ABC, *Transcripts*, p. 225.

24 Telstra, *Transcripts*, p. 25.

25 For more detail see Chapter 3.

7.48 Carrier Vodafone has interests in the emerging Globalstar mobile satellite system, but that remains a future prospect only. The first Globalstar satellite has been launched and will commence operations soon.

Costs

7.49 Telstra described the telephone charges for the Indian Ocean Territories as standard rates. This means that, for calls to the mainland, people are charged at the standard Australian rate for distances over 745 kilometres, the highest rate of STD charges.[26] Therefore, while the rates are standard, they are not cheap. They become a prohibitive cost to Internet users who must access the Internet at slow speeds.

7.50 On Norfolk Island, the reason for the high cost of calls was different even if the result was the same. The issue was one of the differentials between the charges for calls from Australia to Norfolk compared to the charges from Norfolk to Australia. The former is set by Telstra or OPTUS and is in line with national domestic charges; the latter are set by the Norfolk Island Government and are 60 per cent higher than Australian based calls.[27]

7.51 The cost of the changeover from the analogue to digital systems on the Indian Ocean Territories, the new cabling and the new network for switching, is $4.5 million.[28] This was a cost borne by Telstra in the first instance but as the Indian Ocean Territories are defined by the ACA as Net Cost Areas (NCA), Telstra as the Universal Service Provider can lodge claims for the losses incurred for supplying USOs to these areas.

7.52 Internet costs are affected by line capacity, the 'speed' of the line and the STD rate. The cost of a permanent link from Christmas Island to the mainland was, according to the Australian Federal Police, $110,000 for the initial installation and a recurrent annual rental cost of $55,000.[29] Telstra gave the committee a table of fees that put the cost for a permanent link between Christmas Island and Canberra at an installation fee of $5,000 to $6,000 and an annual recurrent fee of $90,000.[30] These costs have to be borne by the agency requiring the link. Where the ratio of customers to the service is low, whether the agency is a commercial enterprise or a school or an ISP provider, these costs can be prohibitive.

7.53 It is understood that a Globalstar phone terminal will cost US$1,000 and up to US$1.50 per minute to use. Rival Inmarsat Horizon also plans US$1,000 handsets while its current Mini-M terminal costs US$3,000 with rates from US$2.70 to US$8 a minute. Clearly there will be a growing, competitive market in the provision of access to the new global satellite communications systems. Time will tell how they suit islanders; however, we may note that if each Norfolk Islander had a $1,000

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26 Telstra, *Transcripts,* p. 21.

27 Norfolk Island Hospital, *Submissions,* p. S60.

28 Telstra, S*ubmissions,* p. S100.

29 AFP, S*ubmissions,* p.S71.

30 Telstra, *Submissions,* p. S230.

handset, the overall cost would be close to $2 million, of similar magnitude to the proposed cost for the Global System Mobile (GSM) digital mobile system.

7.54 As we enter the Information Age, technological developments may have considerable influence on remote community expectations about the many uses of communications services. For instance, the new global mobile systems will also serve the Antarctic continent in the near future. Future satellite systems should concentrate on providing data transfer and Internet access. Clearly though, such access will come at a high initial price to remote users. However, an average quoted $1,000 cost for individual handsets or satellite ground stations appears to suggest they will lie within the bounds of affordability.

The inconsistent application of the USO in the External Territories

7.55 A concern raised during the inquiry was the inconsistency of application of the Universal Service Obligation.[31] The Indian Ocean Territories have an advantage in that the telecommunications USO applies to them. Norfolk Islanders and Australians in the Antarctic do not benefit from such regulation and face different access and pricing arrangements. There may be a case for standardising the application of the USOs through an examination of the legislative requirements as they apply to each of the territories.

7.56 The provision of high quality telecommunications in the External Territories is not just a decision related to the current needs of the people of the Territories, the policy needs to consider the longer term health, education, welfare and transport costs which poor communications engender. Strategic planning encompassing both the financial and technical requirements necessary to ensure that the Territories maintain parity with the rest of Australia in telecommunications is essential. It is not clear that that kind of strategic planning, specifically relating to the External Territories' needs, is occurring at present.

Multi-media and the Internet

7.57 Until very recently, the remote island communities had virtually no access to the Internet or to wider multimedia and electronic commerce applications. The lack of access was because such circuits were not readily available. There were no Internet service providers on the islands. The cost of providing data circuits, especially to a small market contributed to this situation. Individuals gained access through expensive and slow use of International Direct Dial or Subscriber Trunk Dial telephone lines. Nowadays, a local Internet Service Provider (ISP) can arrange a lease

31 The legal framework for the telecommunications USO is outlined in detail in Chapter 2.

for a high capacity line[32] and sell its use at lower and more affordable rates to island clients, on a partial time or access basis.

7.58 The Internet Service Provider's operation depends in part on the ability to negotiate line leases that are acceptable in terms of capacity and cost. The service must remain distinctive and affordable in order to attract and keep customers on-line and active. If Internet access becomes slow, clients may discontinue the service or try contact through another ISP operator. The biggest problem facing any ISP in the External Territories in the size of the pool of potential customers in relation to the cost of lines.

7.59 As a telecommunications carrier, Telstra itself provides an ISP operation through its Big Pond service. Some may view this as a conflict of interest and unfair ISP competition but there has been little official review of the case. The question arises as to whether Telstra provides sufficient capacity to any other ISP.

The USO and the Internet

7.60 One of the most significant questions raised in this inquiry was whether the USO relating to telecommunications should be extended to include Internet access. On 6 May 1998 the Minister for Communications, the Information Economy and the Arts announced that he had asked the ACA to conduct a review into whether or not the USO should be upgraded to digital data capability and report to the Minister by 15 August 1998.[33] The review was published on 18 August 1998.

7.61 In the review the ACA concluded that it did not favour specifying a digital data carriage service as part of the USO. This was based on a cost/benefit analysis, rather than on equity grounds. It was found that the costs to the community of specifying a carriage service with delivery of 64 kbps would outweigh the benefits *if it were provided solely by ISDN*. Specifying a service as part of the USO would increase the universal service levy on carriers with the potential to increase telecommunications service prices, affect the profitability of carriers, and impact unfavourably upon competition in the industry. It would present the universal service provider with costs exceeding revenues by approximately $500 million over ten years. The ACA was not aware of any international examples where a data capability has been specified in a USO.

7.62 The review also identified the high risk that the benefits of ISDN would not be realised because satellite technology would provide a service that would adequately meet customer needs at a lower or comparable price. (Customer charges for a satellite-based service would be broadly comparable to a basic rate ISDN

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32 Line capacity is measured in terms of the bits of information per second that the circuit can transmit. A very basic Internet service can operate at a capacity rate of 9,600 bits per second (bps) or 9.6 kilo-bps. A more acceptable capacity to users would be 64 kbps, a rate that provides for reasonably fast transmission of graphics and audio. Many users may actually share the same line with sophisticated switching (multiplexing) that divides up individual transmissions by time or code techniques. The 64 kbps rate corresponds to Integrated Services Digital Network (ISDN) speed.

33 Senator the Hon Richard Alston, Minister for Communications, *Media release: Digital data review*, 6 May 1998, p.2.

channel, as is demonstrated in the table below.) Satellite-based delivery systems capable of providing 64kbps data rate capacity were expected to be available by the end of 1998. The review advised that Telstra was about to commence trials of two such data delivery systems that will make available a digital data capability broadly comparable to that of a base rate ISDN channel by the end of 1998. The extension of Telstra's current licence condition to one that required Telstra to provide ISDN to 100 per cent of the Australian population would impact commercially on Telstra. However, there would be little actual cost if the obligation could be met using the proposed digital data satellite access service. The report concluded that 'the emerging satellite services have the potential to address disadvantages of isolation and low population density.'[34]

Table 7.1 Customer charges for satellite-based and ISDN channel services

	Satellite-based service	**Basic-rate ISDN channel**
Service access charges	$600 per annum	$740 per annum
Purchase of necessary additional equipment	$1200	$650 (minimum)
Usage charges	User charges do apply, but amount is not specified.	7-34 cents per minute for distances greater than 25 km.
Connection fee		$295

Source: Australian Communications Authority, *Digital Data Inquiry,* August 1998, p. 95.

7.63 A similar review by Northern Territory Government remote area communications by a consultant in 1997 determined the criterion for higher speed data services as 64 kbps. Telstra would have to provide missing links between customer premises and its long distance infrastructure to provide such higher capacity services.[35]

7.64 During the 1998 federal election campaign, the Minister for Communications announced that the Coalition would legislate to include in the USO a requirement to provide a 64 kbps ISDN service (the 'non-satellite 64 kbps service') on demand to at least 96 per cent of the Australian population. The USO would also include a requirement that, from 1 July 1999, the universal service provider must make available, on demand, to any Australian unable to obtain access to the non-satellite 64 kbps service a broadly comparable 64 kbps digital data service using satellite technology to provide the downlink for the Internet (the 'satellite 64 kbps service').

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34 Australian Communications Authority, *Digital Data Inquiry, Public Inquiry under section 486(1) of the Telecommunications Act 1997*, August 1998, p.76.

35 Exhibit No.13, Alan Aked; Morespen Pty Ltd, *Comments on Key Issues: Northern Territory Government Remote Area Communications Review*, May 1997.

Within the legislation there would be provision for anyone not able to receive the non-satellite 64 kbps service to receive, upon purchase of the necessary satellite receiving equipment, a 50 per cent reimbursement of the cost of purchase. The subsidy would be funded under the USO.[36]

7.65 The four per cent of Australians not covered by the ISDN guarantee would include the residents in the External Territories. They therefore would be eligible for the 64 kbps service provided by the satellite and the 50 per cent reimbursement.[37]

7.66 Both the Australian Democrats and the Australian Labor Party support including the provision of ISDN–standard service in the Universal Service Obligation.

Educational and commercial opportunities

7.67 The Committee thought that tele-centres or local resource centres deserved consideration as a way for the islands to access basic Internet services. I.O. Communications reported a high community interest in obtaining funds to provide a shared tele-centre for local use on Christmas Island.[38] In rural mainland situations, a local community often created a non-profit, voluntary co-operative to establish and run a centre in order to provide central Internet and email access. Centralised access is also achieved by professional business call-centres. By contrast with the local community centres, these business call-centres are more powerful. They required a Public Automatic Branch Exchange (PABX), leased ISDN lines and major commercial links in order to serve regional markets with operator services. Clearly this latter, expensive proposition was not an option for the Islands, but a small tele-centre costing only a few thousand dollars may be achievable.

7.68 The Internet had the potential to be even more valuable on isolated Islands than on the mainland, since they often lacked resources like libraries and educational institutions. The Department of the Environment and Heritage saw Internet access as vitally important to maintain communication with the mainland, especially given time differences and delays in mail deliveries.[39] Contracts, maps, photographs, legislation, reports, urgent bulletins, educational programs and information could all be manipulated by computer and channelled through the internet at minimal cost.

7.69 The Joint Statutory Committee on Public Accounts and Audit report on Internet Commerce noted that electronic commerce offered social, economic and recreational benefits to rural and remote communities. The Internet also offered opportunities for remote businesses to be more competitive and accessible to wider markets and sources of goods. The House of Representatives Standing Committee on Financial Institutions and Public Administration inquired into alternative means for

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36 Liberal Party of Australia, *Communications: Making Australia Stronger*, http://www.liberal.org.au/ARCHIVES/election98/policy/communications.communications.htm (as at 20 November 1998).

37 Department of Communications, Information Technology and the Arts, *Transcripts,* p. 26.

38 IOCOMM, *Submissions*, p. S36.

39 Department of the Environment and Heritage, *Submissions*, p. S165.

providing banking and like services in regional and remote Australia. This inquiry also canvassed Internet access issues.

7.70 The Commonwealth has made electronic commerce a priority through a range of policies and programs designed to foster widespread adoption by business of the Internet and data transmission systems.

New Satellite Internet Services

7.71 The new satellite Internet systems relied on asymmetric services, ie. with the satellite providing the high-speed data, averaging 400 kbps and a dial-up user modem as the low speed (9.6 kbps) return data request route. The OPTUS digital satellite platform 'Aurora' should enable users with a single dish to receive Internet and broadcast services from the one unit.[40] OPTUS was evaluating tenders for the purchase of a high-powered satellite capable of delivering combined Internet and broadcast services across Australia and its territories. This new OPTUS C-series would actually be a joint venture with the Department of Defence. Given the strategic significance of the External Territories, then we might expect the new OPTUS system to serve them.

7.72 During the inquiry, Telstra announced its new remote area satellite Internet service. This was a hybrid service, that used a modem and telephone to dial-up the customer's ISP and employed a high-speed PanAmSat2 link to deliver Internet data back to the user.[41] Working at 14.4 kbps, possibly later at 28.8 kbps, the service was still rather slow and required customers to purchase 2.4m dish antennas and decoders for about $1000. It was too early to judge the success of the new service.

7.73 Beginning in the next century, new broadband satellite services may offer multi-megabit per second service at low cost to small Internet user terminals. A new series of high-powered satellites, known as Ka-band systems, will use satellite links to bypass the multiple router links and fibre cable bottlenecks that now obstruct data communications. Many of the traditional C-band and Ku-band satellite frequencies are becoming too congested, particularly for geostationary satellites, so that the new systems may offer viable alternative access, especially to isolated island communities.

7.74 With local tele-centres for community use, on-line educational programs available at schools, and individual Internet connections, islanders would be at least in a position to enter the converging, on-line economy of the next century. There also appeared to be some synergies in providing satellite ground stations or user handsets that offered a combined range of broadcasting, telecommunications, on-line internet and multimedia services. For this to be achieved, it will be necessary for the government to develop strategic plans involving the communities, the carriers, the satellite providers and the broadcast networks.

7.75 With the spectacular growth of the Internet and multimedia services in general comes the prospect of reducing the tyranny of distance that islanders face. They should be able to gain access to global information sources as well as domestic

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40 OPTUS, *Submissions*, p. S136.

41 In fact all users received the same data, but each receiver only selected its own page.

programs to help end the communications isolation of the past. This inquiry sought to facilitate that access and determine the best means to support island communities. In general, there has been minimal government regulation of the Internet at either the international or domestic levels. Therefore the Committee supports practical recommendations and standards to enable islanders to come on-line.

Recommendation (16)

The Committee recommends that the new contract, to be negotiated in 1999 for airline services to the Indian Ocean Territories, accommodate the freight, postal and tourism needs of the Territories by providing a sufficient increase in the capacity over the present arrangements. (7.6 – 7.9)

Recommendation (17)

The Committee recommends that

- **the Commonwealth Government ensure that funds under the Regional Telecommunications Infrastructure Fund scheme be made available to the External Territories; and/or**

- **the USO be expanded to include a digital data capacity service for the External Territories of 64kbps. (7.27 - 7.28, 7.60 - 7.65)**

Recommendation (18)

The Committee recommends that the Australian Broadcasting Authority review the quality of broadcast services in the Indian Ocean Territories in mid-1999, after the transition to digital satellites is completed. The purpose is to determine whether alternative arrangements need to be made to ensure continuous quality broadcasts into both of the Territories. (7.29 - 7.30)

Recommendation (19)

The Committee recommends that, by November 1999, the Australian Communications Authority report on the progress of the Telstra upgrade of telecommunications facilities on the Indian Ocean Territories, with particular reference to telecommunications service accessibility, quality, reliability and cost. (7.56)

Recommendation (20)

The Committee recommends that the Department of Communications, Information Technology and the Arts develop appropriate standards for satellite bandwidth capacity which is available to people in the External Territories, so that these communities can reliably access quality broadcast and Internet services. (7.41 – 7.42)

Recommendation (21)

The Committee recommends that the Department of Communications, Information Technology and the Arts, the Department of Transport and Regional Services and the Department of Health and Aged Care jointly develop plans and a timetable for the phased introduction of tele-medicine and tele-conferencing into the External Territories, through the provision of suitable infrastructure, equipment and training. (7.67 – 7.75)

Recommendation (22)

The Committee recommends that the Department of Transport and Regional Services assess the possibility of assisting the Island communities in the establishment of community tele-centres in order to provide cost effective access to the Internet. (7.74)

Recommendation (23)

The Committee endorses the Government's decision to include the provision of an Internet data line capacity of at least 64 kbps as part of the Universal Service Obligation to the External Territories. (7.64 – 7.65)

Senator Julian McGauran
Chairman

22 March 1999